This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

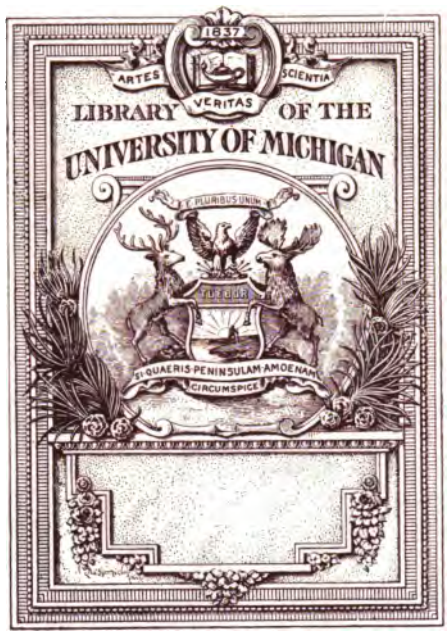
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`



THE GIFT OF
Smithsonian Institution

E
51
.U6
no.7

SMITHSONIAN INSTITUTION
BUREAU OF ETHNOLOGY: J. W. POWELL, DIRECTOR

TEXTILE FABRICS OF ANCIENT PERU

BY

WILLIAM H. HOLMES

WASHINGTON
GOVERNMENT PRINTING OFFICE
1889

ILLUSTRATIONS.

FIG. 1.—The mummy pack and accompanying burials.
FIG. 2.—Spindle of wood weighted with a whorl of polished terra-cotta.
FIG. 3.—Series of implements, most of which were probably used in weaving.
FIG. 4.—Curiously conventionalized figure in gobelins.
FIG. 5.—Highly conventionalized animal motive introduced into geometric patterns.
FIG. 6.—Human figure in rich colors, a masterpiece of textile art.
FIG. 7.—Analysis of the weaving of life forms in gobelins.
FIG. 8.—Small piece of gobelins showing slits open and closed.
FIG. 9.—Silhouette of a small piece of open gobelins.
FIG. 10.—The weaving of curved forms in gobelins.
FIG. 11.—Portion of a fringed mantle of remarkable construction and great beauty.

147049

TEXTILE FABRICS OF ANCIENT PERU.

By William H. Holmes.

The occasion for the preparation of this paper was furnished by the request of Mr. E. A. Barber, of Philadelphia, that I should make a brief study of a small but select series of Peruvian fabrics belonging to him, and forwarded to me for examination. In prosecuting this work I had occasion to examine the fine collections of ancient Peruvian textiles recently acquired by the Bureau of Ethnology. These fabrics, so far as is known, are representative of the best period of aboriginal textile art, and are conceded by all to be marvels of execution and design.

But little is known chronologically of the various groups of art products obtained from the burial places of the coast belt of Peru, but most of them belong in all probability to what may be called the Incarial epoch. Little definite information has been gained in regard to the relationships of the people, racial or political, with the historic nations, and for the present we must content ourselves with a study of their remarkable art remains. Many of the more cultured American nations were skilled in the weaver's art, as we learn from the accounts of the Conquerors, yet with a few exceptions extremely meager traces of the fabrics themselves have been preserved to our time. The ancient inhabitants of Peru, as is customary with many peoples of corresponding grades of culture, buried a multitude of useful and valued objects along with the dead, and it happened that the dry sands in which the tombs were excavated, preserved, through a process of desiccation, not only the bodies but most of the fragile articles and delicate fabrics that accompanied them. In the Sierra and upland regions, where the conditions of burial were not so favorable, but slight traces of the more perishable articles appear to have been preserved.

By far the greater portion of cloths and richly ornamented garments were wrapped about the bodies of the dead and may now be unfolded, layer after layer, piece after piece, from the half-decayed mummies. Additional fabrics are contained in rolls, baskets, nets, and vases.

In Fig. 1 we have an example of burial given by Reiss and Stübel,[1] showing the appearance of the mummy pack and the character of the accompanying articles. The various articles are intended to be shown

[1] Reiss and Stübel: The Necropolis of Ancon, Berlin, 1880.

in the identical positions in which they were discovered. At the right are earthen vessels, baskets, and net-covered gourds, containing various articles of food and art, and on the left a group of sepulchral banners, and trophies of unknown use and significance.

The burial grounds of Ancon, on the coast near Lima, have probably furnished the greatest quantity of rich stuffs, and many museums are now well stocked with handsome specimens from this famous necropolis; but similar finds are reported from Pachacamac, Paramonga, Cosma, Huanico, Chimu, and other places scattered up and down the coast.

The magnificent work of Reiss and Stübel, with its realistic chromolithographic plates, places these relics before the world in the most satisfactory manner possible, and the handsome work of Wiener,[2] although without colored plates, contains a multitude of instructive illustrations. All of these textiles are much alike and appear to be the product of a single period of culture, and, we may fairly assume, of kindred or closely associated peoples.

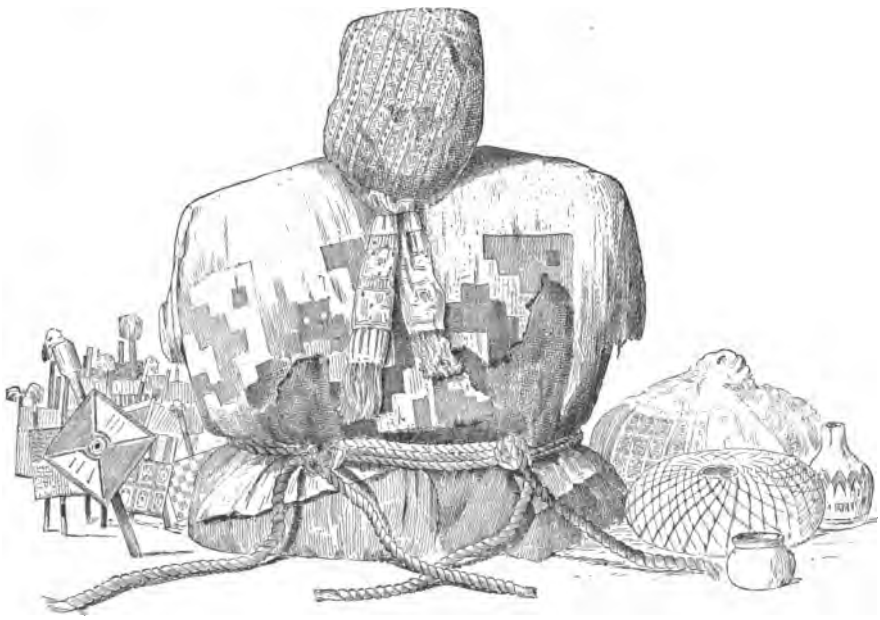


FIG. 1.—The mummy pack and accompanying burials.

The grade of culture represented by this work would seem to be very high, considering American products only, but its equivalent in old-world culture must be sought in remote ages. This is shown in a striking manner when we place the more delicate pieces of Peruvian work beside fabrics taken from the mummies of ancient Egypt. In quality of fabric, method of construction, color, and style of embellishment, the correspondence is indeed remarkable. The closest analogy, so far

[2] Charles Wiener: Pérou et Bolivie, Paris, 1880.

as my observation extends, is with some Egyptian fabrics of the first few centuries of the Christian era.

With the Americans, as with the ancient peoples of the East, the appliances of manufacture were exceedingly simple, but primitive weavers make up for the lack of refined machinery by a degree of painstaking only permissible with workmen who place slight value upon time. No looms have been discovered. A frame to stretch the threads of the web, and simple tools or devices for the separation of these and the insertion of the woof, appear to have been the only requisites in the production of ordinary fabrics. Wiener found in a grave at Pachacamac an unfinished piece of gobelins still attached to the two round poles, one of which probably had been fastened to some fixed object and the other perhaps to the person of the workman. By consulting the ancient manuscripts of Mexico we find that a similar device was in use in that country. Fabrics are woven upon similar frames by the Peruvian natives of to-day as well as by many other American tribes. For larger work more complete looms with healds and other devices similar to those used by the Pueblos of to-day may have been employed. Closer examination of the fabrics themselves may lead to a better knowledge of the methods of weaving.

The strands employed in all classes of work were spun from cotton and other vegetable fibers, or from the wool of the llama, the alpaca, the vicuña, and the guanäco, and were generally moderately fine and exceedingly even and well twisted. Dyes of numerous rich and brilliant colors were used, but their nature is not known to us.

Spindles of wood were used, and the artistically shaped and decorated whorls with which they were weighted were generally made of clay.

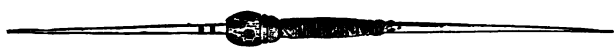


FIG. 2.—A spindle of wood weighted with a neat whorl of polished and painted terra-cotta.

The spindles of many nations are very similar to this. The threads were twisted by twirling the shaft between the fingers and the thumb or between the palm and some convenient part of the person. In Fig. 3 we have examples of a number of implements used in spinning, sewing, netting, weaving, and embroidering. Nearly all are made of wood, and many are shaped with neatness and evident regard for tasteful appearance. Copper and bone also appear to have been considerably used.

In *a* and *b* we have neatly shaped needles, the first with an eye at the upper end and a straight shaft, and the second with an encircling groove in place of an eye, and a slender curved point; *c* is an ordinary bone awl; and *d* a delicate needle pointed at both ends. A wooden spool is shown in *e*, a netting mesh in *f*, a weaving band in *g*, and a thin, symmetrical, shuttle-like piece of wood, well adapted to the parting of the fine web strands, in *h*. The peculiar tool shown in *i* has a head shaped

somewhat like that of a fish, has an incision at the mouth, and is notched and perforated at the neck. It may have been used in netting or in managing the threads in weaving. The remaining figures illustrate varieties of spindles and spindle-like implements, some of which are neatly carved and painted.

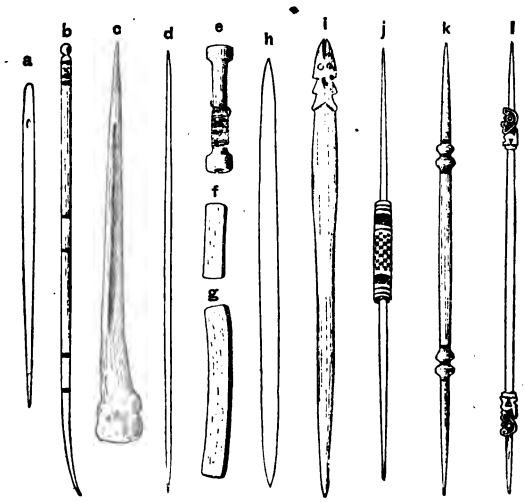


FIG. 3.—Series of implements, most of which were probably used in textile work.

The textile products of the Peruvians included a wide range of articles and utensils. So far as the relics show, the great body of the finer textiles consisted of wearing apparel.

For the head there were caps, richly colored bands, and pendent ornaments. For the body there were mantles, shirts, girdles, sashes, and a variety of wraps; all of which had elaborate ornamental figures woven in, and many were furnished with a profusion of textile appendages. For the feet, sandals of various kinds were braided. Besides these there were probably blankets, hangings for the doors and walls, and a variety of tissues employed in sheltering from the sun and elements. There were ceremonial fabrics and strange banners to accompany the dead. For use in the various arts there were mats, baskets, bags, slings, nets, and other articles in great variety. All are purely American in character, having apparently no suggestion of Spanish or other foreign influence.

Many of these articles were woven in their entirety, but it was customary to weave a garment in parts which were afterwards stitched together. There was no cutting and fitting. Goods were not woven "by the yard," as we would express it.

A very large percentage of the articles forwarded to our museums are embellished with designs woven in the fabric or added as a surface finish. Many cloths were woven with a view to ordinary use and were

strong and durable, but it is clear that durability was a secondary consideration in a very large part of the work, and that beauty was the thing most desired. It would be a great mistake to suppose that there was in this embellishment any lack of refinement of taste as judged by European standards. Many of the rich garments were doubtless intended for display in the fantastic ceremonies of a barbarous race and must have been admired for their gaudy effects, but there is throughout a purity of design and a refinement of color that could be studied to advantage by the foremost decorators of the world.

A most noticeable feature of these fabrics, and one calculated to challenge the attention of students of art development, is the employment of animate forms in decoration. Both animal and vegetable forms appear, but the former greatly predominate. This free delineation of animals is characteristic of the native Americans, and is suggestive of the close relationship held by them to exist between man and his brute associates. In their painting upon pottery they drew their forms with a free hand. They carved them in wood, stone, and shell, modeled them in clay, and cast them in metal with much vigor. In fabrics the delineations take a character of their own, a character dependent upon the technical restraints of the art. The remarkable influence of the web and woof upon design, and the causes thereof, have been fully set forth in a paper in the Sixth Annual Report of the Bureau of Ethnology. I do not need here to go over that ground, but shall call attention to some especial features of the Peruvian work.

Generally the colors employed in weaving animal figures are not arranged with any reference to the colors of nature, but are selected and skillfully alternated to give the desired effect to the decoration.

The cleverness shown in introducing irregular forms of nature into geometric outlines without destroying them completely may be illustrated by almost any example selected at random. One furnished by Mr. Barber is given in Fig. 4. Here the form of some unidentified creature is imposed upon an ordinary scroll pattern, the head in each repetition taking the place of the interlinked ends of the scroll units, whilst the various parts of the body appear along the connecting curves.

A still more formal treatment of animal motives is shown in Fig. 5.

In this case it is barely possible to identify the features of a life form as the lines all conform to the rectilinear geometricity of the fabric, but the head with the eyes and the mouth appear at the termination of each hook, and in their proper relations to one another. Beyond this very formal presentation we have still higher stages of convention, in which the merest traces of animal features may be found.

A most interesting example of the conventional rendition of life forms is shown in Fig. 6. The fabric is a magnificent piece of gobelins, collected by Reiss and Stübel, and presented in all its rich colors in the great work published by them. It had been separated into two parts near the middle, and through an oversight, perhaps, these parts were

not properly correlated by the authors. Joining the parts, we have the complete human figure as here shown, decked in plumes and clothed in garments of elegant patterns and varied colors. It is placed upon a

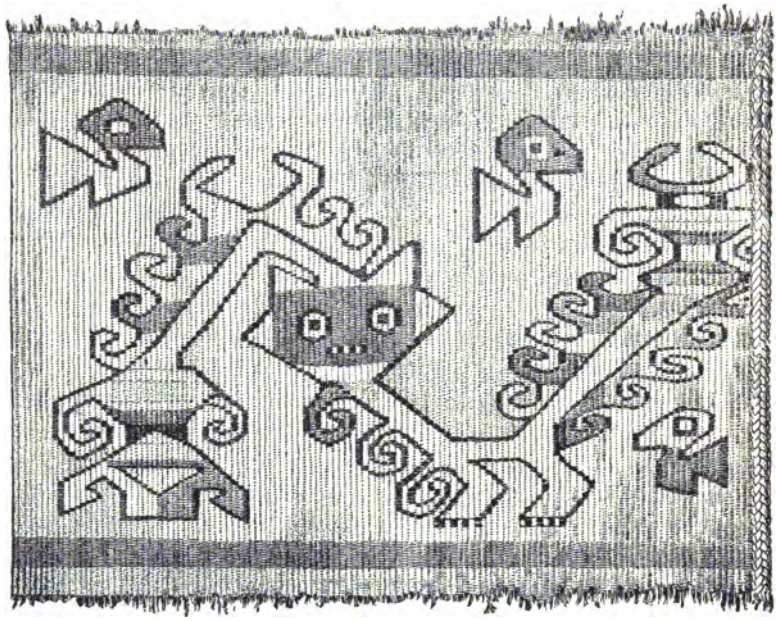


FIG. 4.—Curiously conventionalized animal figure in gobelins.

crimson field and is surrounded by varied devices, mostly of animal origin, which are probably symbolic. This piece is a triumph of skill and taste, and one of which no adequate idea can be given in a mere sketch.

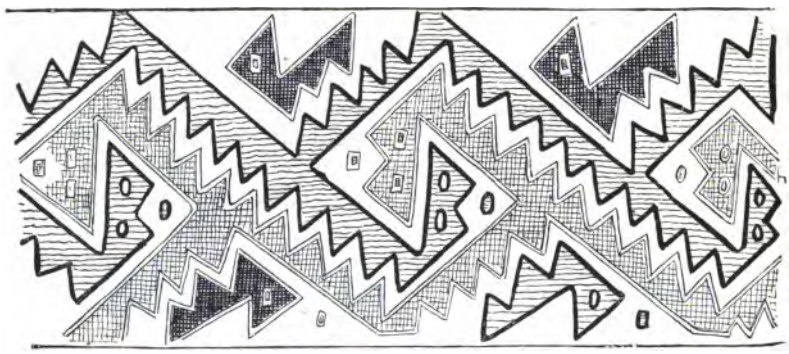


FIG. 5.—Highly conventionalized animal motive introduced into geometric patterns.

It will be observed that all the examples given are woven in the tapestry style.

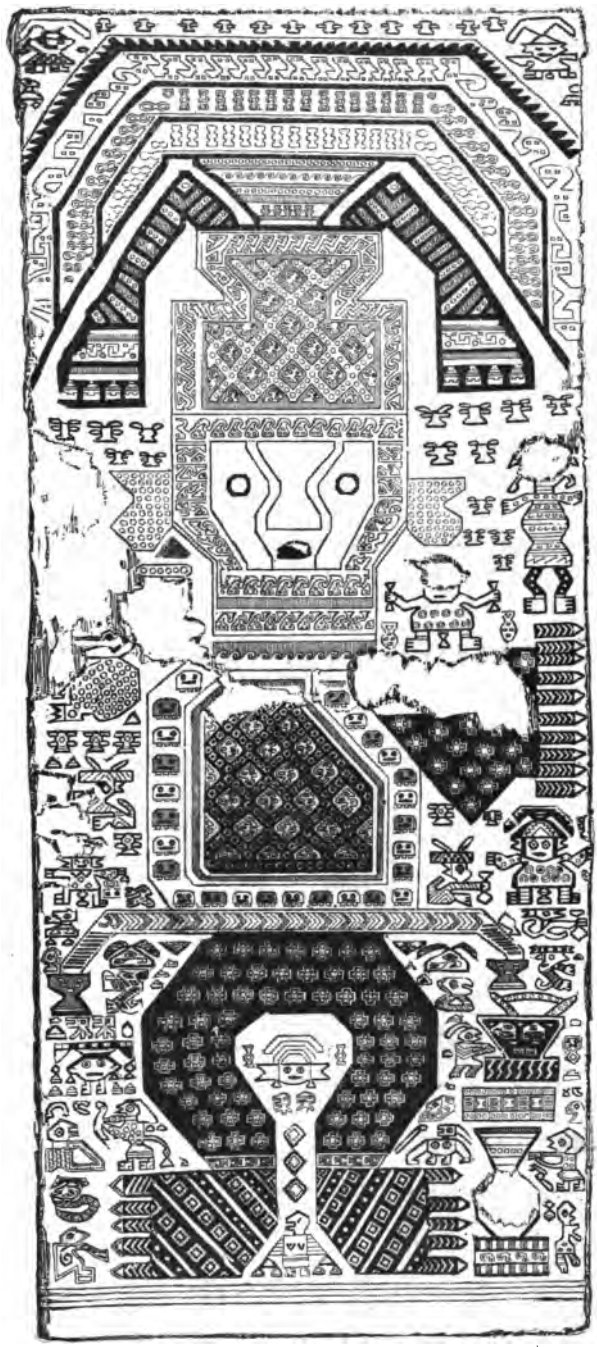


FIG. 6.—Human figure in rich colors; a masterpiece of textile art.

We find that this was the method almost universally employed in richly decorated stuffs, and for the reason no doubt that complex patterns and pictorial effects are much more easily achieved by this than by any other method. In plain weaving, where two series of filaments, the web and the woof, are employed, the best possible texture for simple utility is produced. Both series connect more or less completely across the piece and are interlaced approximately at right angles, giving great strength to the work; but designs, excepting checkers and plain geometric figures, are introduced with much difficulty.

The gobelins style partakes of the nature of embroidery, and patterns of various kinds are worked out with comparative ease.

The Peruvian workman stretched his series of warp threads side by side, usually twenty or thirty to the inch, between two holding-rods, and upon this warp as a foundation he began his fabrics. It seems that he did not begin as in ordinary weaving at one end of the piece, carrying the work uniformly thread by thread to the other end, but worked more or less in patches, setting in independently one entire bit of color, carrying the yarn back and forth over that area and pressing it down until the web was entirely hidden and both sides of the work exhibited the same figure. Other patches of color were added to this until the desired pattern was developed.

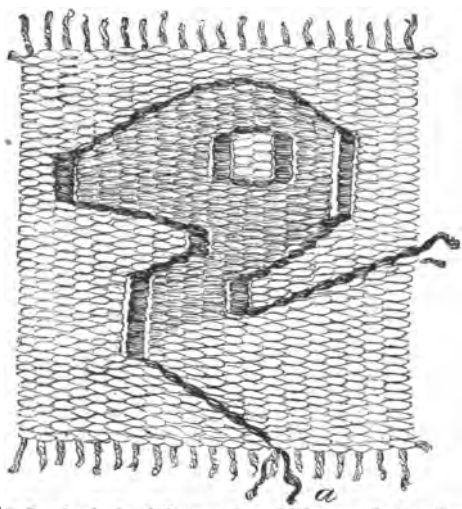


FIG. 7.—Analysis of the weaving of life forms in tapestry.

As a result of the peculiar methods employed some unusual effects were produced, two of which need further elucidation. The most notable feature is the open-work effect characteristic of these fabrics. Holding a piece up against the light, the figures appear partly outlined as transparencies, the effect being very pleasing. In all cases the slits constituting the open work are found to run *with* the warp and occur where the outlines of the color areas follow the warp.

The conditions giving rise to these slits may be readily illustrated.

The bit of gobelins shown in Fig. 7 represents on a large scale a portion of a figure of a bird and the ground surrounding it. The warp threads are shown projecting above and below. On these the colored threads of the figure were carried back and forth. In the first place, perhaps, the bird was partially or entirely outlined by carrying a black thread around it. Beginning at any point within the outline, say, for example, at *a* in the lower margin of the section given, the black thread—or two black threads if a solid outline were desired—would be carried obliquely upward to the left across the web until the turn at the throat were reached. Above this point the outline takes a vertical direction and is parallel with the warp. Throughout this vertical distance the black thread must be wrapped about a single warp strand, entirely inclosing it, and the same thing must occur whenever a vertical line is to be employed as at the other turns of the neck, at the end of the beak, at the back of the head, and on the right and left of the eye. When the outline is all set, the filling in of the color areas begins.[1] First, supposing the head is to be red, a red thread is inserted and carried back and forth, omitting the eye space. Now, when in the process the ends of the beak or the back of the head is reached, we discover no means of connecting the red yarn with the black vertical outline strand without covering or obscuring the latter, and the red yarn must therefore be turned about the last free thread and then be carried back across the head, and so on. Vertical slits are thus left between the red and the black, and the same thing occurs along all vertical outlines. It will further be seen that when the ground is put in about the figure, corresponding slits are left on the outside of the black lines, so that the wrapped part of the black outline remains quite free or unattached. The effect, in cases where no outline of a distinct color is used, is shown in the vertical line of junction between the color areas of the ground at the right and left of the bird. In Fig. 8, the yarn of the color areas passes around contiguous strands of the web without connecting across, and an open slit, the whole height of the ornament, results. In pieces where many long vertical lines are employed, the fabric is much weakened, and in many cases in this Peruvian work the sides of the openings have been stitched together with a needle as indicated at the right. The transparency effect of this work when placed against the light is shown in Fig. 9, which represents in silhouette a portion of the border from which the preceding figure is taken.

Large, elaborately figured pieces are extremely interesting when viewed as transparencies. Similar but very simple open-work effects are occasionally secured in ordinary weaving, patterns employing two or more colors being woven in patches independent of each other, the ground being filled in by ordinary methods of woof insertion. The work

[1] It is possible that these figures were formed step by step as the fabric advanced, the workman carrying each color one step forward with each movement of the healds, if such were used, but the peculiarities of the goods will be as clearly understood from the point of view I have taken.

in such cases progresses systematically from one end of the piece to the other, as in the loom work of the Pueblo Indians.

The slits, as in the tapestry, occur only on outlines that run with the web. In Pueblo work the junction line is closed by passing the threads of both neighboring color areas around a common web thread, causing a slight enlargement along the line.

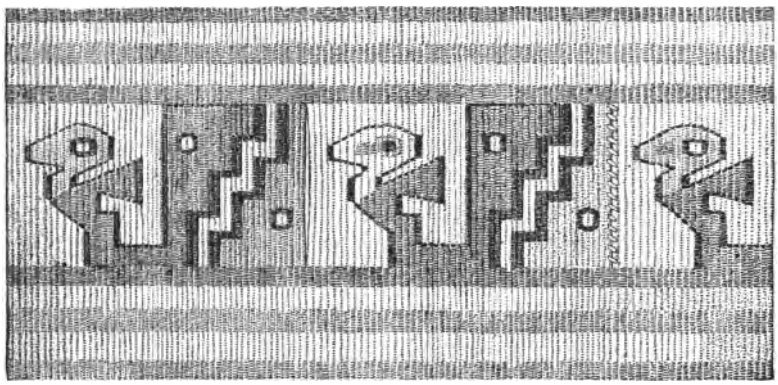


FIG. 8.—Small piece of gobelins showing slits open and closed.

Another feature of tapestry, in which its superiority in the delineation of natural forms is shown, is illustrated in Fig. 10.

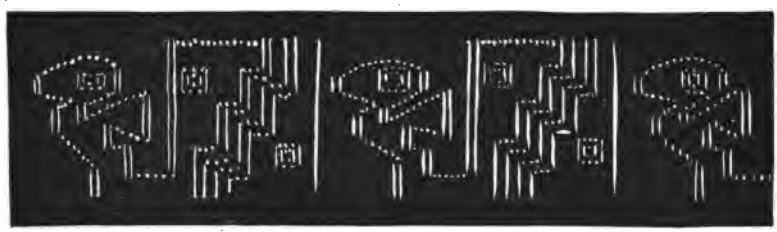


FIG. 9.—Silhouette of a small piece of open gobelins.

In ordinary weaving the woof threads cross the warp at right angles, or nearly so, and the processes of insertion and beating down make it difficult to vary from this formal relation of parts, but in tapestry there is much freedom, as it is possible to carry the threads to a certain extent *with* the curves of the figures. It will be seen, however, by reference to Fig. 10, that the amount of mobility is limited; when it is attempted to fill in the curved beak of the bird the threads are inclined downward, conforming to the curved outline. When the final turn is reached at the curve of the beak, and the outline descends with the warp, wrapping must be resorted to and a straight line is produced, but it is more restricted than in rectangular work. Beyond this, in completing the hooked bill, the threads are inclined downward to the right.

In every vertical turn there must, therefore, be an imperfection in the curve, caused by reversing the direction of the threads.

It will prove tedious to describe in detail the numerous varieties of

weaving, and the very great diversity of effect produced, but a few salient features may be noted.

For all the more ordinary forms of fabrics, the prevailing method of combining the web and the woof is that of simple interlacing. By this method, which is known as plain weaving, many differently appearing stuffs are produced. We have open work ranging in character from coarse coffee sacking to fine, gauze-like mummy cloth. There are more compact fabrics, varying from heavy sail cloth to fine muslins, and in closely impacted forms we have a ribbed surface, in which the warp series of strands is entirely obscured by the woof. In all of this work the decorations when employed are highly geometric, but animal form are often cleverly introduced.

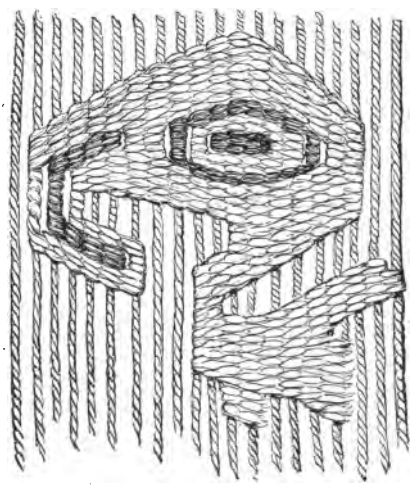


FIG. 10.—The weaving of curved forms in gobelins.

In open work, and especially in that variety intended as a foundation for embroidery, what is known as the twined combination is employed. In this the woof threads are twined together in pairs, inclosing in each half turn one of the warp threads. In this way the mesh is firmly fixed, after the manner of a net. This combination is not adapted to the weaving of compact cloths, nor to the introduction of varied ornaments. It is much used in basketry.

A number of varieties of combination are sometimes employed in a single piece, all being woven into the same warp. It is also very usual, as already noted, to see cloths made up of variously woven and diversely colored sections stitched together.

We find a great variety of netted stuffs and netted articles, such as bags, pouches, and covers for articles of domestic use. Threads of varying degrees of coarseness were used, and the intersections were thoroughly knotted as in our fish-nets. Knitting was common also, but, as the interloopings are very difficult to describe, I will not now undertake to analyze them.